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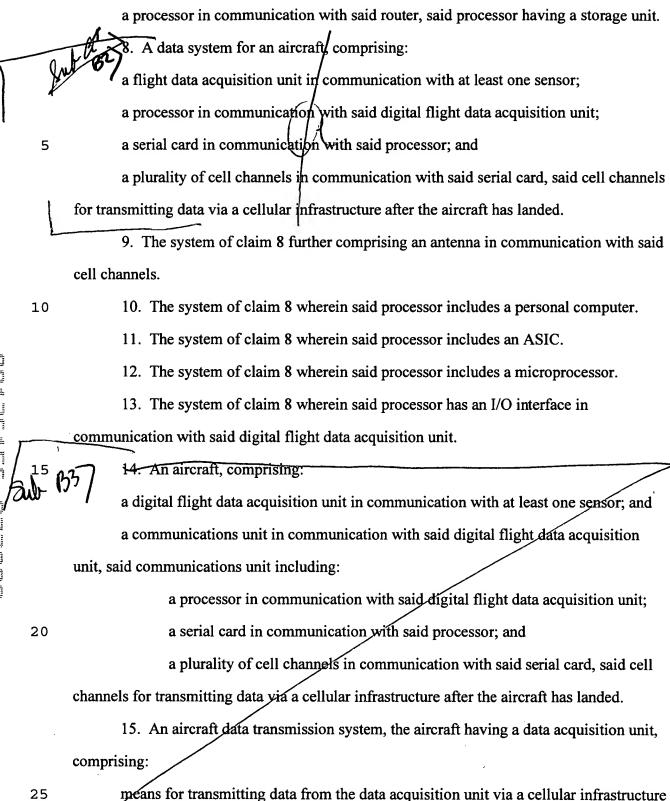
1. An aircraft data transmission system, the aircraft having a data acquisition unit, comprising:

a communications unit located in the aircraft and in communication with the data acquisition unit;

a cellular infrastructure in communication with said communications unit after the aircraft has landed; and

a data reception unit-in communication with said cellular infrastructure.

- 2. The system of claim 1 wherein said data reception unit is in communication with said cellular infrastructure via the Internet.
- 3. The system of claim 1 wherein said data reception unit is in communication with said cellular infrastructure via the public switch telephone network.
- 4. The system of claim 1 wherein said communications unit has at least one modem in communication with said cellular infrastructure and said data reception unit has at least one modem in communication with said cellular infrastructure.
 - 5. The system of claim 1 wherein said communications unit includes:
 - a processor;
 - a serial card in communication with said processor;
 - at least one cell channel in communication with said serial card; and
 - at least one antenna in communication with said cell channel.
 - 6. The system of claim 1 wherein said cellular infrastructure includes: an antenna;
 - a transceiver subsystem in communication with said antenna; and
 - a controller in communication with said transceiver subsystem.
- 7. The system of claim 1 wherein said data reception unit includes: a router; and



after the aircraft has landed; and

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means for receiving said data from said cellular infrastructure

16. The system of claim 15 wherein said means for sending data includes a

processor

17. The system of claim 15 wherein said means for receiving data includes a processor.

18. A method of transmitting aircraft flight data from an aircraft, comprising: receiving flight data from a data acquisition unit;

transmitting said flight data via a cellular communications infrastructure after the aircraft has landed; and

receiving said transmitted flight data. 10

> 19. A computer-implemented method of transmitting aircraft flight data from an aircraft, comprising:

receiving flight data from a digital flight data acquisition unit; processing said flight data to prepare said data for transmission; and

ransmitting said processed data via a cellular infrastructure after the aircraft has

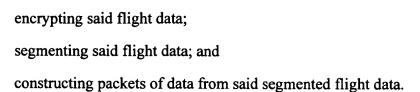
landed.

20. The method of claim 19 further comprising receiving said transmitted data at a flight operations center.

- 21. The method of claim 20 further comprising receiving said transmitted data and transmitting said received data via the Internet before receiving said transmitted data at a flight operations center.
 - 22. The method of claim 20 further comprising receiving said transmitted data and transmitting said received data via the public-switched telephone network before receiving said transmitted data at a flight operations center.
- 23. The method of claim 19 wherein processing said flight data includes: compressing said flight data;

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24. The method of claim 19 wherein receiving said transmitted data includes: acknowledging receipt of said transmitted data; reassembling said received data; decrypting said reassembled data; uncompressing said decrypted data; and

storing said uncompressed data.

25. The method of claim 19 wherein processing said flight data includes:

receiving a weight-on-wheels signal;

initiating a data transfer;

compressing said flight data;

encrypting said compressed flata;

creating a packet queue;

starting a primary data thread;

waiting a predetermined period of time;

determining if any threads are active;

repeating, when threads are active, the steps of waiting a predetermined period of

time and determining if any threads are active; and

exiting processing said flight data when no threads are active.

26. The method of claim 25 wherein starting a primary data thread includes:

initiating a PPP connection;

initiating a transfer session;

starting at least one secondary data thread;

determining if data remains in the primary data thread;

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sending said data when data remains in the primary data thread;
determining if data threads are active when no data remains in the primary data thread;

repeating, when said threads are active, the step of determining if data remains in the primary data thread;

ending said session when no threads are active;

closing said PPP connection; and

exiting starting a primary data thread.

27. The method of claim 26 wherein starting at least one secondary data thread

10 includes:

- (a) setting the secondary data thread to active;
- (b) initiating a PPP connection;
- (c) determining if data remains in the secondary data thread;
- (d) sending a data packet when data remains;
- (e) repeating step c when data remains;
 - (f) closing said PPP connection when no data remains;
 - (g) setting the secondary data thread to inactive;
 - (h) exiting starting at least one secondary data thread; and
 - (i) repeating steps a through h for each secondary data thread.
- 28. The method of claim 27 wherein repeating steps a through h includes repeating steps a through h in parallel for each said secondary data thread.

29. The method of claim 20 wherein receiving said transmitted data includes:

creating a socket;

receiving a message;

determining if said message is an initialization message;

initiating a session when said/message is an initialization message;

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determining if said message is a data message when said message is not an initialization message; processing said message/when said message is a data message; determining if said message is an end session when said message is not a data message; processing said message when said message is an end session; and repeating, when said message is not an end session message, the step of receiving a message. 30. The method of claim 29 wherein initializing a session includes: allocating buffer space; sending an initiation session acknowledgment; and returning to receiving a message 31. The method of claim 29 wherein processing said message when said message is a data message includes: copying said message to a buffer; sending a data message acknowledgment; and returning to receiving a message. 32. The method of claim 29 wherein processing said message when said message is not an end session includes: computing a checksum; determining if said checksum is valid; saving a buffer to a temporary file; decrypting said temporary file; uncompressing said/temporary file; sending an end session acknowledgment; and

returning to receiving a message.



add as

33. A computer readable medium having stored thereon instructions which when

executed by a processor, cause the processor to perform the steps of:

receiving flight data from a digital flight data acquisition unit in an aircraft;

processing said flight data to prepare said data for transmission; and

transmitting said processed data via a cellular infrastructure when said aircraft has

danded.